

Sequence Listing korrekt.txt  
SEQUENCE LISTING

<110> Aventis Behring GmbH

<120> Modified CDNA Factor VIII and its Derivatives

<130> A66

<160> 34

<170> PatentIn version 3.1

<210> 1

<211> 34

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<213> Artificial

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34

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ggcgagattt ccaaggactt ctggcgatgg ttcc

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cccaccaaca tgggtggcatg gaagcttatg tc

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Sequence Listing korrekt.txt

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gacataagct tccatgccac catgttggtg gg

32

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<211> 47

<212> DNA

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cagaggaacc ccaactacga cgtaaaaata atgaagaagc ggaagac

47

<210> 6

<211> 47

<212> DNA

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47

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<212> DNA

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<211> 42

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42

Sequence Listing korrekt.txt

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<212> DNA

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cagaatcagt aagattatca tcatagtctt ccgcttcttc

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<400> 11

ggtcaggttt gatgatgacg actctccttc ctttatcc

38

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<211> 38

<212> DNA

<213> Artificial

<400> 12

ggataaagga aggagagtcg tcatcatcaa acctgacc

38

<210> 13

<211> 38

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cccttagtcc tcgccccctc tgacagaagt tataaaag

38

Sequence Listing korrekt.txt

<210> 14

<211> 38

<212> DNA

<213> Artificial

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ctttataac ttctgtcaga gggggcgagg actaaggg

38

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gtccgattta tggcatacac agatgttacc ttaagactc g

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<211> 41

<212> DNA

<213> Artificial

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cgagtcttaa aggtaacatc tgtgtatgcc ataaatcgga c

41

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<400> 17

cctttaagac tcgtaaagct attcagcatg aatcagg

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<210> 18

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Sequence Listing korrekt.txt

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<210> 22

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<210> 23

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Sequence Listing korrekt.txt

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<211> 38

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<212> DNA

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ctgtatttga tgagaaccaa agctggtacc tcacag 36

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<400> 26  
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<210> 27

<211> 30

<212> DNA

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Sequence Listing korrekt.txt

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cagctggagt gcagcttcag gatccagagt tc

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gaactctgga tcctgaagct gcactccagc tg

32

<210> 31

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<212> DNA

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gaatagaatg gatgttttca ttgctcttca tgctgagcag ataccatcg

49

<210> 33

<211> 2114

Sequence Listing korrekt.txt

<212> PRT

<213> Porcine

<400> 33

Ala Ile Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser Trp Asp Tyr  
1 5 10 15  
Arg Gln Ser Glu Leu Leu Arg Glu Leu His Val Asp Thr Arg Phe Pro  
20 25 30  
Ala Thr Ala Pro Gly Ala Leu Pro Leu Gly Pro Ser Val Leu Tyr Lys  
35 40 45  
Lys Thr Val Phe Val Glu Phe Thr Asp Gln Leu Phe Ser Val Ala Arg  
50 55 60  
Pro Arg Pro Pro Trp Met Gly Leu Leu Gly Pro Thr Ile Gln Ala Glu  
65 70 75 80  
Val Tyr Asp Thr Val Val Thr Leu Lys Asn Met Ala Ser His Pro  
85 90 95  
Val Ser Leu His Ala Val Gly Val Ser Phe Trp Lys Ser Ser Glu Gly  
100 105 110  
Ala Glu Tyr Glu Asp His Thr Ser Gln Arg Glu Lys Glu Asp Asp Lys  
115 120 125  
Val Leu Pro Gly Lys Ser Gln Thr Tyr Val Trp Gln Val Leu Lys Glu  
130 135 140  
Asn Gly Pro Thr Ala Ser Asp Pro Pro Cys Leu Thr Tyr Ser Tyr Leu  
145 150 155 160  
Ser His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile Gly Ala  
165 170 175  
Leu Leu Val Cys Arg Glu Gly Ser Leu Thr Arg Glu Arg Thr Gln Asn  
180 185 190  
Leu His Glu Phe Val Leu Leu Phe Ala Val Phe Asp Glu Gly Lys Ser  
195 200 205  
Trp His Ser Ala Arg Asn Asp Ser Trp Thr Arg Ala Met Asp Pro Ala  
210 215 220  
Pro Ala Arg Ala Gln Pro Ala Met His Thr Val Asn Gly Tyr Val Asn  
225 230 235 240



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Arg Ser Leu Pro Gly Leu Ile Gly Cys His Lys Lys Ser Val Tyr Trp  
245 250 255

His Val Ile Gly Met Gly Thr Ser Pro Glu Val His Ser Ile Phe Leu  
260 265 270

Glu Gly His Thr Phe Leu Val Arg His His Arg Gln Ala Ser Leu Glu  
275 280 285

Ile Ser Pro Leu Thr Phe Leu Thr Ala Gln Thr Phe Leu Met Asp Leu  
290 295 300

Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His His His Gly Gly  
305 310 315 320

Met Glu Ala His Val Arg Val Glu Ser Cys Ala Glu Glu Pro Gln Leu  
325 330 335

Arg Arg Lys Ala Asp Glu Glu Glu Asp Tyr Asp Asp Asn Leu Tyr Asp  
340 345 350

Ser Asp Met Asp Val Val Arg Leu Asp Gly Asp Asp Val Ser Pro Phe  
355 360 365

Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr Trp Val His  
370 375 380

Tyr Ile Ser Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro Ala Val Pro  
385 390 395 400

Ser Pro Ser Asp Arg Ser Tyr Lys Ser Leu Tyr Leu Asn Ser Gly Pro  
405 410 415

Gln Arg Ile Gly Arg Lys Tyr Lys Lys Ala Arg Phe Val Ala Tyr Thr  
420 425 430

Asp Val Thr Phe Lys Thr Arg Lys Ala Ile Pro Tyr Glu Ser Gly Ile  
435 440 445

Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu Leu Ile Ile  
450 455 460

Phe Lys Asn Lys Ala Ser Arg Pro Tyr Asn Ile Tyr Pro His Gly Ile  
465 470 475 480

Thr Asp Val Ser Ala Leu His Pro Gly Arg Leu Leu Lys Gly Trp Lys  
485 490 495

His Leu Lys Asp Met Pro Ile Leu Pro Gly Glu Thr Phe Lys Tyr Lys  
500 505 510

Sequence Listing korrekt.txt

Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp Pro Arg Cys  
515 520 525

Leu Thr Arg Tyr Tyr Ser Ser Ser Ile Asn Leu Glu Lys Asp Leu Ala  
530 535 540

Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu Ser Val Asp  
545 550 555 560

Gln Arg Gly Asn Gln Met Met Ser Asp Lys Arg Asn Val Ile Leu Phe  
565 570 575

Ser Val Phe Asp Glu Asn Gln Ser Trp Tyr Leu Ala Glu Asn Ile Gln  
580 585 590

Arg Phe Leu Pro Asn Pro Asp Gly Leu Gln Pro Gln Asp Pro Glu Phe  
595 600 605

Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val Phe Asp Ser  
610 615 620

Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp Tyr Ile Leu  
625 630 635 640

Ser Val Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe Ser Gly Tyr  
645 650 655

Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr Leu Phe Pro  
660 665 670

Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro Gly Leu Trp  
675 680 685

Val Leu Gly Cys His Asn Ser Asp Leu Arg Asn Arg Gly Met Thr Ala  
690 695 700

Leu Leu Lys Val Tyr Ser Cys Asp Arg Asp Ile Gly Asp Tyr Tyr Asp  
705 710 715 720

Asn Thr Tyr Glu Asp Ile Pro Gly Phe Leu Leu Ser Gly Lys Asn Val  
725 730 735

Ile Glu Pro Arg Ser Phe Ala Gln Asn Ser Arg Pro Pro Ser Ala Ser  
740 745 750

Gln Lys Gln Phe Gln Thr Ile Thr Ser Pro Glu Asp Asp Val Glu Leu  
755 760 765

Asp Pro Gln Ser Gly Glu Arg Thr Gln Ala Leu Glu Glu Leu Ser Val  
770 775 780

Sequence Listing korrekt.txt

Pro Ser Gly Asp Gly Ser Met Leu Leu Gly Gln Asn Pro Ala Pro His  
785 790 795 800

Gly Ser Ser Ser Ser Asp Leu Gln Glu Ala Arg Asn Glu Ala Asp Asp  
805 810 815

Tyr Leu Pro Gly Ala Arg Glu Arg Asn Thr Ala Pro Ser Ala Ala Ala  
820 825 830

Arg Leu Arg Pro Glu Leu His His Ser Ala Glu Arg Val Leu Thr Pro  
835 840 845

Glu Pro Glu Lys Glu Leu Lys Lys Leu Asp Ser Lys Met Ser Ser Ser  
850 855 860

Ser Asp Leu Leu Lys Thr Ser Pro Thr Ile Pro Ser Asp Thr Leu Ser  
865 870 875 880

Ala Glu Thr Glu Arg Thr His Ser Leu Gly Pro Pro His Pro Gln Val  
885 890 895

Asn Phe Arg Ser Gln Leu Gly Ala Ile Val Leu Gly Lys Asn Ser Ser  
900 905 910

His Phe Ile Gly Ala Gly Val Pro Leu Gly Ser Thr Glu Glu Asp His  
915 920 925

Glu Ser Ser Leu Gly Glu Asn Val Ser Pro Val Glu Ser Asp Gly Ile  
930 935 940

Phe Glu Lys Glu Arg Ala His Gly Pro Ala Ser Leu Thr Lys Asp Asp  
945 950 955 960

Val Leu Phe Lys Val Asn Ile Ser Leu Val Lys Thr Asn Lys Ala Arg  
965 970 975

Val Tyr Leu Lys Thr Asn Arg Lys Ile His Ile Asp Asp Ala Ala Leu  
980 985 990

Leu Thr Glu Asn Arg Ala Ser Ala Thr Phe Met Asp Lys Asn Thr Thr  
995 1000 1005

Ala Ser Gly Leu Asn His Val Ser Asn Trp Ile Lys Gly Pro Leu  
1010 1015 1020

Gly Lys Asn Pro Leu Ser Ser Glu Arg Gly Pro Ser Pro Glu Leu  
1025 1030 1035

Leu Thr Ser Ser Gly Ser Gly Lys Ser Val Lys Gly Gln Ser Ser  
1040 1045 1050

Sequence Listing korrekt.txt

Gly Gln Gly Arg Ile Arg Val Ala Val Glu Glu Glu Glu Leu Ser  
1055 1060 1065

Lys Gly Lys Glu Met Met Leu Pro Asn Ser Glu Leu Thr Phe Leu  
1070 1075 1080

Thr Asn Ser Ala Asp Val Gln Gly Asn Asp Thr His Ser Gln Gly  
1085 1090 1095

Lys Lys Ser Arg Glu Glu Met Glu Arg Arg Glu Lys Leu Val Gln  
1100 1105 1110

Glu Lys Val Asp Leu Pro Gln Val Tyr Thr Ala Thr Gly Thr Lys  
1115 1120 1125

Asn Phe Leu Arg Asn Ile Phe His Gln Ser Thr Glu Pro Ser Val  
1130 1135 1140

Glu Gly Phe Asp Gly Gly Ser His Ala Pro Val Pro Gln Asp Ser  
1145 1150 1155

Arg Ser Leu Asn Asp Ser Ala Glu Arg Ala Glu Thr His Ile Ala  
1160 1165 1170

His Phe Ser Ala Ile Arg Glu Glu Ala Pro Leu Glu Ala Pro Gly  
1175 1180 1185

Asn Arg Thr Gly Pro Gly Pro Arg Ser Ala Val Pro Arg Arg Val  
1190 1195 1200

Lys Gln Ser Leu Lys Gln Ile Arg Leu Pro Leu Glu Glu Ile Lys  
1205 1210 1215

Pro Glu Arg Gly Val Val Leu Asn Ala Thr Ser Thr Arg Trp Ser  
1220 1225 1230

Glu Ser Ser Pro Ile Leu Gln Gly Ala Lys Arg Asn Asn Leu Ser  
1235 1240 1245

Leu Pro Phe Leu Thr Leu Glu Met Ala Gly Gly Gln Gly Lys Ile  
1250 1255 1260

Ser Ala Leu Gly Lys Ser Ala Ala Gly Pro Leu Ala Ser Gly Lys  
1265 1270 1275

Leu Glu Lys Ala Val Leu Ser Ser Ala Gly Leu Ser Glu Ala Ser  
1280 1285 1290

Gly Lys Ala Glu Phe Leu Pro Lys Val Arg Val His Arg Glu Asp  
1295 1300 1305

Sequence Listing korrekt.txt

Leu Leu Pro Gln Lys Thr Ser Asn Val Ser Cys Ala His Gly Asp  
1310 1315 1320

Leu Gly Gln Glu Ile Phe Leu Gln Lys Thr Arg Gly Pro Val Asn  
1325 1330 1335

Leu Asn Lys Val Asn Arg Pro Gly Arg Thr Pro Ser Lys Leu Leu  
1340 1345 1350

Gly Pro Pro Met Pro Lys Glu Trp Glu Ser Leu Glu Lys Ser Pro  
1355 1360 1365

Lys Ser Thr Ala Leu Arg Thr Lys Asp Ile Ile Ser Leu Pro Leu  
1370 1375 1380

Asp Arg His Glu Ser Asn His Ser Ile Ala Ala Lys Asn Glu Gly  
1385 1390 1395

Gln Ala Glu Thr Gln Arg Glu Ala Ala Trp Thr Lys Gln Gly Gly  
1400 1405 1410

Pro Gly Arg Leu Cys Ala Pro Lys Pro Pro Val Leu Arg Arg His  
1415 1420 1425

Gln Arg Asp Ile Ser Leu Pro Thr Phe Gln Pro Glu Glu Asp Lys  
1430 1435 1440

Met Asp Tyr Asp Asp Ile Phe Ser Thr Glu Thr Lys Gly Glu Asp  
1445 1450 1455

Phe Asp Ile Tyr Gly Glu Asp Glu Asn Gln Asp Pro Arg Ser Phe  
1460 1465 1470

Gln Lys Arg Thr Arg His Tyr Phe Ile Ala Ala Val Glu Gln Leu  
1475 1480 1485

Trp Asp Tyr Gly Met Ser Glu Ser Pro Arg Ala Leu Arg Asn Arg  
1490 1495 1500

Ala Gln Asn Gly Glu Val Pro Arg Phe Lys Lys Val Val Phe Arg  
1505 1510 1515

Glu Phe Ala Asp Gly Ser Phe Thr Gln Pro Ser Tyr Arg Gly Glu  
1520 1525 1530

Leu Asn Lys His Leu Gly Leu Leu Gly Pro Tyr Ile Arg Ala Glu  
1535 1540 1545

Val Glu Asp Asn Ile Met Val Thr Phe Lys Asn Gln Ala Ser Arg  
1550 1555 1560

Sequence Listing korrekt.txt

Pro Tyr Ser Phe Tyr Ser Ser Leu Ile Ser Tyr Pro Asp Asp Gln  
1565 1570 1575

Glu Gln Gly Ala Glu Pro Arg His Asn Phe Val Gln Pro Asn Glu  
1580 1585 1590

Thr Arg Thr Tyr Phe Trp Lys Val Gln His His Met Ala Pro Thr  
1595 1600 1605

Glu Asp Glu Phe Asp Cys Lys Ala Trp Ala Tyr Phe Ser Asp Val  
1610 1615 1620

Asp Leu Glu Lys Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu  
1625 1630 1635

Ile Cys Arg Ala Asn Thr Leu Asn Ala Ala His Gly Arg Gln Val  
1640 1645 1650

Thr Val Gln Glu Phe Ala Leu Phe Phe Thr Ile Phe Asp Glu Thr  
1655 1660 1665

Lys Ser Trp Tyr Phe Thr Glu Asn Val Glu Arg Asn Cys Arg Ala  
1670 1675 1680

Pro Cys His Leu Gln Met Glu Asp Pro Thr Leu Lys Glu Asn Tyr  
1685 1690 1695

Arg Phe His Ala Ile Asn Gly Tyr Val Met Asp Thr Leu Pro Gly  
1700 1705 1710

Leu Val Met Ala Gln Asn Gln Arg Ile Arg Trp Tyr Leu Leu Ser  
1715 1720 1725

Met Gly Ser Asn Glu Asn Ile His Ser Ile His Phe Ser Gly His  
1730 1735 1740

Val Phe Ser Val Arg Lys Lys Glu Glu Tyr Lys Met Ala Val Tyr  
1745 1750 1755

Asn Leu Tyr Pro Gly Val Phe Glu Thr Val Glu Met Leu Pro Ser  
1760 1765 1770

Lys Val Gly Ile Trp Arg Ile Glu Cys Leu Ile Gly Glu His Leu  
1775 1780 1785

Gln Ala Gly Met Ser Thr Thr Phe Leu Val Tyr Ser Lys Glu Cys  
1790 1795 1800

Gln Ala Pro Leu Gly Met Ala Ser Gly Arg Ile Arg Asp Phe Gln  
1805 1810 1815

Sequence Listing korrekt.txt

Ile Thr Ala Ser Gly Gln Tyr Gly Gln Trp Ala Pro Lys Leu Ala  
1820 1825 1830

Arg Leu His Tyr Ser Gly Ser Ile Asn Ala Trp Ser Thr Lys Asp  
1835 1840 1845

Pro His Ser Trp Ile Lys Val Asp Leu Leu Ala Pro Met Ile Ile  
1850 1855 1860

His Gly Ile Met Thr Gln Gly Ala Arg Gln Lys Phe Ser Ser Leu  
1865 1870 1875

Tyr Ile Ser Gln Phe Ile Ile Met Tyr Ser Leu Asp Gly Arg Asn  
1880 1885 1890

Trp Gln Ser Tyr Arg Gly Asn Ser Thr Gly Thr Leu Met Val Phe  
1895 1900 1905

Phe Gly Asn Val Asp Ala Ser Gly Ile Lys His Asn Ile Phe Asn  
1910 1915 1920

Pro Pro Ile Val Ala Arg Tyr Ile Arg Leu His Pro Thr His Tyr  
1925 1930 1935

Ser Ile Arg Ser Thr Leu Arg Met Glu Leu Met Gly Cys Asp Leu  
1940 1945 1950

Asn Ser Cys Ser Met Pro Leu Gly Met Gln Asn Lys Ala Ile Ser  
1955 1960 1965

Asp Ser Gln Ile Thr Ala Ser Ser His Leu Ser Asn Ile Phe Ala  
1970 1975 1980

Thr Trp Ser Pro Ser Gln Ala Arg Leu His Leu Gln Gly Arg Thr  
1985 1990 1995

Asn Ala Trp Arg Pro Arg Val Ser Ser Ala Glu Glu Trp Leu Gln  
2000 2005 2010

Val Asp Leu Gln Lys Thr Val Lys Val Thr Gly Ile Thr Thr Gln  
2015 2020 2025

Gly Val Lys Ser Leu Leu Ser Ser Met Tyr Val Lys Glu Phe Leu  
2030 2035 2040

Val Ser Ser Ser Gln Asp Gly Arg Arg Trp Thr Leu Phe Leu Gln  
2045 2050 2055

Asp Gly His Thr Lys Val Phe Gln Gly Asn Gln Asp Ser Ser Thr  
2060 2065 2070

Sequence Listing korrekt.txt

Pro Val Val Asn Ala Leu Asp Pro Pro Leu Phe Thr Arg Tyr Leu  
2075 2080 2085

Arg Ile His Pro Thr Ser Trp Ala Gln His Ile Ala Leu Arg Leu  
2090 2095 2100

Glu Val Leu Gly Cys Glu Ala Gln Asp Leu Tyr  
2105 2110

<210> 34

<211> 2332

<212> PRT

<213> Homo sapiens

<400> 34

Ala Thr Arg Arg Tyr Tyr Leu Gly Ala Val Glu Leu Ser Trp Asp Tyr  
1 5 10 15

Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg Phe Pro Pro  
20 25 30

Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val Tyr Lys Lys  
35 40 45

Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile Ala Lys Pro  
50 55 60

Arg Pro Pro Trp Met Gly Leu Leu Gly Pro Thr Ile Gln Ala Glu Val  
65 70 75 80

Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser His Pro Val  
85 90 95

Ser Leu His Ala Val Gly Val Ser Tyr Trp Lys Ala Ser Glu Gly Ala  
100 105 110

Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp Asp Lys Val  
115 120 125

Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu Lys Glu Asn  
130 135 140

Gly Pro Met Ala Ser Asp Pro Leu Cys Leu Thr Tyr Ser Tyr Leu Ser  
145 150 155 160

His Val Asp Leu Val Lys Asp Leu Asn Ser Gly Leu Ile Gly Ala Leu  
165 170 175



Sequence Listing korrekt.txt

Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr Gln Thr Leu  
 180 185 190  
 His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly Lys Ser Trp  
 195 200 205  
 His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp Ala Ala Ser  
 210 215 220  
 Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr Val Asn Arg  
 225 230 235 240  
 Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val Tyr Trp His  
 245 250 255  
 Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile Phe Leu Glu  
 260 265 270  
 Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser Leu Glu Ile  
 275 280 285  
 Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met Asp Leu Gly  
 290 295 300  
 Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His Asp Gly Met  
 305 310 315 320  
 Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro Gln Leu Arg  
 325 330 335  
 Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp Leu Thr Asp  
 340 345 350  
 Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser Pro Ser Phe  
 355 360 365  
 Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr Trp Val His  
 370 375 380  
 Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro Leu Val Leu  
 385 390 395 400  
 Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn Asn Gly Pro  
 405 410 415  
 Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met Ala Tyr Thr  
 420 425 430  
 Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu Ser Gly Ile  
 435 440 445

Sequence Listing korrekt.txt

Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu Leu Ile Ile  
 450 455 460

Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro His Gly Ile  
 465 470 475 480

Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys Gly Val Lys  
 485 490 495

His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe Lys Tyr Lys  
 500 505 510

Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp Pro Arg Cys  
 515 520 525

Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg Asp Leu Ala  
 530 535 540

Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu Ser Val Asp  
 545 550 555 560

Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val Ile Leu Phe  
 565 570 575

Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu Asn Ile Gln  
 580 585 590

Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp Pro Glu Phe  
 595 600 605

Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val Phe Asp Ser  
 610 615 620

Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp Tyr Ile Leu  
 625 630 635 640

Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe Ser Gly Tyr  
 645 650 655

Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr Leu Phe Pro  
 660 665 670

Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro Gly Leu Trp  
 675 680 685

Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly Met Thr Ala  
 690 695 700

Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp Tyr Tyr Glu  
 705 710 715 720

Sequence Listing korrekt.txt

Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys Asn Asn Ala  
725 730 735

Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Arg Ser Thr Arg  
740 745 750

Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Asp Ile Glu Lys  
755 760 765

Thr Asp Pro Trp Phe Ala His Arg Thr Pro Met Pro Lys Ile Gln Asn  
770 775 780

Val Ser Ser Ser Asp Leu Leu Met Leu Leu Arg Gln Ser Pro Thr Pro  
785 790 795 800

His Gly Leu Ser Leu Ser Asp Leu Gln Glu Ala Lys Tyr Glu Thr Phe  
805 810 815

Ser Asp Asp Pro Ser Pro Gly Ala Ile Asp Ser Asn Asn Ser Leu Ser  
820 825 830

Glu Met Thr His Phe Arg Pro Gln Leu His His Ser Gly Asp Met Val  
835 840 845

Phe Thr Pro Glu Ser Gly Leu Gln Leu Arg Leu Asn Glu Lys Leu Gly  
850 855 860

Thr Thr Ala Ala Thr Glu Leu Lys Lys Leu Asp Phe Lys Val Ser Ser  
865 870 875 880

Thr Ser Asn Asn Leu Ile Ser Thr Ile Pro Ser Asp Asn Leu Ala Ala  
885 890 895

Gly Thr Asp Asn Thr Ser Ser Leu Gly Pro Pro Ser Met Pro Val His  
900 905 910

Tyr Asp Ser Gln Leu Asp Thr Thr Leu Phe Gly Lys Lys Ser Ser Pro  
915 920 925

Leu Thr Glu Ser Gly Gly Pro Leu Ser Leu Ser Glu Glu Asn Asn Asp  
930 935 940

Ser Lys Leu Leu Glu Ser Gly Leu Met Asn Ser Gln Glu Ser Ser Trp  
945 950 955 960

Gly Lys Asn Val Ser Ser Thr Glu Ser Gly Arg Leu Phe Lys Gly Lys  
965 970 975

Arg Ala His Gly Pro Ala Leu Leu Thr Lys Asp Asn Ala Leu Phe Lys  
980 985 990

Sequence Listing korrekt.txt

Val Ser Ile Ser Leu Leu Lys Thr Asn Lys Thr Ser Asn Asn Ser Ala  
995 1000 1005

Thr Asn Arg Lys Thr His Ile Asp Gly Pro Ser Leu Leu Ile Glu  
1010 1015 1020

Asn Ser Pro Ser Val Trp Gln Asn Ile Leu Glu Ser Asp Thr Glu  
1025 1030 1035

Phe Lys Lys Val Thr Pro Leu Ile His Asp Arg Met Leu Met Asp  
1040 1045 1050

Lys Asn Ala Thr Ala Leu Arg Leu Asn His Met Ser Asn Lys Thr  
1055 1060 1065

Thr Ser Ser Lys Asn Met Glu Met Val Gln Gln Lys Lys Glu Gly  
1070 1075 1080

Pro Ile Pro Pro Asp Ala Gln Asn Pro Asp Met Ser Phe Phe Lys  
1085 1090 1095

Met Leu Phe Leu Pro Glu Ser Ala Arg Trp Ile Gln Arg Thr His  
1100 1105 1110

Gly Lys Asn Ser Leu Asn Ser Gly Gln Gly Pro Ser Pro Lys Gln  
1115 1120 1125

Leu Val Ser Leu Gly Pro Glu Lys Ser Val Glu Gly Gln Asn Phe  
1130 1135 1140

Leu Ser Glu Lys Asn Lys Val Val Val Gly Lys Gly Glu Phe Thr  
1145 1150 1155

Lys Asp Val Gly Leu Lys Glu Met Val Phe Pro Ser Ser Arg Asn  
1160 1165 1170

Leu Phe Leu Thr Asn Leu Asp Asn Leu His Glu Asn Asn Thr His  
1175 1180 1185

Asn Gln Glu Lys Lys Ile Gln Glu Glu Ile Glu Lys Lys Glu Thr  
1190 1195 1200

Leu Ile Gln Glu Asn Val Val Leu Pro Gln Ile His Thr Val Thr  
1205 1210 1215

Gly Thr Lys Asn Phe Met Lys Asn Leu Phe Leu Leu Ser Thr Arg  
1220 1225 1230

Gln Asn Val Glu Gly Ser Tyr Asp Gly Ala Tyr Ala Pro Val Leu  
1235 1240 1245

## Sequence Listing korrekt.txt

Gln Asp Phe Arg Ser Leu Asn Asp Ser Thr Asn Arg Thr Lys Lys  
 1250 1255 1260  
 His Thr Ala His Phe Ser Lys Lys Gly Glu Glu Glu Asn Leu Glu  
 1265 1270 1275  
 Gly Leu Gly Asn Gln Thr Lys Gln Ile Val Glu Lys Tyr Ala Cys  
 1280 1285 1290  
 Thr Thr Arg Ile Ser Pro Asn Thr Ser Gln Gln Asn Phe Val Thr  
 1295 1300 1305  
 Gln Arg Ser Lys Arg Ala Leu Lys Gln Phe Arg Leu Pro Leu Glu  
 1310 1315 1320  
 Glu Thr Glu Leu Glu Lys Arg Ile Ile Val Asp Asp Thr Ser Thr  
 1325 1330 1335  
 Gln Trp Ser Lys Asn Met Lys His Leu Thr Pro Ser Thr Leu Thr  
 1340 1345 1350  
 Gln Ile Asp Tyr Asn Glu Lys Glu Lys Gly Ala Ile Thr Gln Ser  
 1355 1360 1365  
 Pro Leu Ser Asp Cys Leu Thr Arg Ser His Ser Ile Pro Gln Ala  
 1370 1375 1380  
 Asn Arg Ser Pro Leu Pro Ile Ala Lys Val Ser Ser Phe Pro Ser  
 1385 1390 1395  
 Ile Arg Pro Ile Tyr Leu Thr Arg Val Leu Phe Gln Asp Asn Ser  
 1400 1405 1410  
 Ser His Leu Pro Ala Ala Ser Tyr Arg Lys Lys Asp Ser Gly Val  
 1415 1420 1425  
 Gln Glu Ser Ser His Phe Leu Gln Gly Ala Lys Lys Asn Asn Leu  
 1430 1435 1440  
 Ser Leu Ala Ile Leu Thr Leu Glu Met Thr Gly Asp Gln Arg Glu  
 1445 1450 1455  
 Val Gly Ser Leu Gly Thr Ser Ala Thr Asn Ser Val Thr Tyr Lys  
 1460 1465 1470  
 Lys Val Glu Asn Thr Val Leu Pro Lys Pro Asp Leu Pro Lys Thr  
 1475 1480 1485  
 Ser Gly Lys Val Glu Leu Leu Pro Lys Val His Ile Tyr Gln Lys  
 1490 1495 1500

Sequence Listing korrekt.txt

Asp Leu Phe Pro Thr Glu Thr Ser Asn Gly Ser Pro Gly His Leu  
 1505 1510 1515  
 Asp Leu Val Glu Gly Ser Leu Leu Gln Gly Thr Glu Gly Ala Ile  
 1520 1525 1530  
 Lys Trp Asn Glu Ala Asn Arg Pro Gly Lys Val Pro Phe Leu Arg  
 1535 1540 1545  
 Val Ala Thr Glu Ser Ser Ala Lys Thr Pro Ser Lys Leu Leu Asp  
 1550 1555 1560  
 Pro Leu Ala Trp Asp Asn His Tyr Gly Thr Gln Ile Pro Lys Glu  
 1565 1570 1575  
 Glu Trp Lys Ser Gln Glu Lys Ser Pro Glu Lys Thr Ala Phe Lys  
 1580 1585 1590  
 Lys Lys Asp Thr Ile Leu Ser Leu Asn Ala Cys Glu Ser Asn His  
 1595 1600 1605  
 Ala Ile Ala Ala Ile Asn Glu Gly Gln Asn Lys Pro Glu Ile Glu  
 1610 1615 1620  
 Val Thr Trp Ala Lys Gln Gly Arg Thr Glu Arg Leu Cys Ser Gln  
 1625 1630 1635  
 Asn Pro Pro Val Leu Lys Arg His Gln Arg Glu Ile Thr Arg Thr  
 1640 1645 1650  
 Thr Leu Gln Ser Asp Gln Glu Glu Ile Asp Tyr Asp Asp Thr Ile  
 1655 1660 1665  
 Ser Val Glu Met Lys Lys Glu Asp Phe Asp Ile Tyr Asp Glu Asp  
 1670 1675 1680  
 Glu Asn Gln Ser Pro Arg Ser Phe Gln Lys Lys Thr Arg His Tyr  
 1685 1690 1695  
 Phe Ile Ala Ala Val Glu Arg Leu Trp Asp Tyr Gly Met Ser Ser  
 1700 1705 1710  
 Ser Pro His Val Leu Arg Asn Arg Ala Gln Ser Gly Ser Val Pro  
 1715 1720 1725  
 Gln Phe Lys Lys Val Val Phe Gln Glu Phe Thr Asp Gly Ser Phe  
 1730 1735 1740  
 Thr Gln Pro Leu Tyr Arg Gly Glu Leu Asn Glu His Leu Gly Leu  
 1745 1750 1755

Sequence Listing korrekt.txt

Leu Gly Pro Tyr Ile Arg Ala Glu Val Glu Asp Asn Ile Met Val  
1760 1765 1770

Thr Phe Arg Asn Gln Ala Ser Arg Pro Tyr Ser Phe Tyr Ser Ser  
1775 1780 1785

Leu Ile Ser Tyr Glu Glu Asp Gln Arg Gln Gly Ala Glu Pro Arg  
1790 1795 1800

Lys Asn Phe Val Lys Pro Asn Glu Thr Lys Thr Tyr Phe Trp Lys  
1805 1810 1815

Val Gln His His Met Ala Pro Thr Lys Asp Glu Phe Asp Cys Lys  
1820 1825 1830

Ala Trp Ala Tyr Phe Ser Asp Val Asp Leu Glu Lys Asp Val His  
1835 1840 1845

Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His Thr Asn Thr Leu  
1850 1855 1860

Asn Pro Ala His Gly Arg Gln Val Thr Val Gln Glu Phe Ala Leu  
1865 1870 1875

Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp Tyr Phe Thr Glu  
1880 1885 1890

Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn Ile Gln Met Glu  
1895 1900 1905

Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His Ala Ile Asn Gly  
1910 1915 1920

Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met Ala Gln Asp Gln  
1925 1930 1935

Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser Asn Glu Asn Ile  
1940 1945 1950

His Ser Ile His Phe Ser Gly His Val Phe Thr Val Arg Lys Lys  
1955 1960 1965

Glu Glu Tyr Lys Met Ala Leu Tyr Asn Leu Tyr Pro Gly Val Phe  
1970 1975 1980

Glu Thr Val Glu Met Leu Pro Ser Lys Ala Gly Ile Trp Arg Val  
1985 1990 1995

Glu Cys Leu Ile Gly Glu His Leu His Ala Gly Met Ser Thr Leu  
2000 2005 2010

Sequence Listing korrekt.txt

Phe Leu Val Tyr Ser Asn Lys Cys Gln Thr Pro Leu Gly Met Ala  
 2015 2020 2025  
 Ser Gly His Ile Arg Asp Phe Gln Ile Thr Ala Ser Gly Gln Tyr  
 2030 2035 2040  
 Gly Gln Trp Ala Pro Lys Leu Ala Arg Leu His Tyr Ser Gly Ser  
 2045 2050 2055  
 Ile Asn Ala Trp Ser Thr Lys Glu Pro Phe Ser Trp Ile Lys Val  
 2060 2065 2070  
 Asp Leu Leu Ala Pro Met Ile Ile His Gly Ile Lys Thr Gln Gly  
 2075 2080 2085  
 Ala Arg Gln Lys Phe Ser Ser Leu Tyr Ile Ser Gln Phe Ile Ile  
 2090 2095 2100  
 Met Tyr Ser Leu Asp Gly Lys Lys Trp Gln Thr Tyr Arg Gly Asn  
 2105 2110 2115  
 Ser Thr Gly Thr Leu Met Val Phe Phe Gly Asn Val Asp Ser Ser  
 2120 2125 2130  
 Gly Ile Lys His Asn Ile Phe Asn Pro Pro Ile Ile Ala Arg Tyr  
 2135 2140 2145  
 Ile Arg Leu His Pro Thr His Tyr Ser Ile Arg Ser Thr Leu Arg  
 2150 2155 2160  
 Met Glu Leu Met Gly Cys Asp Leu Asn Ser Cys Ser Met Pro Leu  
 2165 2170 2175  
 Gly Met Glu Ser Lys Ala Ile Ser Asp Ala Gln Ile Thr Ala Ser  
 2180 2185 2190  
 Ser Tyr Phe Thr Asn Met Phe Ala Thr Trp Ser Pro Ser Lys Ala  
 2195 2200 2205  
 Arg Leu His Leu Gln Gly Arg Ser Asn Ala Trp Arg Pro Gln Val  
 2210 2215 2220  
 Asn Asn Pro Lys Glu Trp Leu Gln Val Asp Phe Gln Lys Thr Met  
 2225 2230 2235  
 Lys Val Thr Gly Val Thr Thr Gln Gly Val Lys Ser Leu Leu Thr  
 2240 2245 2250  
 Ser Met Tyr Val Lys Glu Phe Leu Ile Ser Ser Ser Gln Asp Gly  
 2255 2260 2265



Sequence Listing korrekt.txt

His Gln Trp Thr Leu Phe Phe Gln Asn Gly Lys Val Lys Val Phe  
 2270 2275 2280

Gln Gly Asn Gln Asp Ser Phe Thr Pro Val Val Asn Ser Leu Asp  
 2285 2290 2295

Pro Pro Leu Leu Thr Arg Tyr Leu Arg Ile His Pro Gln Ser Trp  
 2300 2305 2310

Val His Gln Ile Ala Leu Arg Met Glu Val Leu Gly Cys Glu Ala  
 2315 2320 2325

Gln Asp Leu Tyr  
 2330